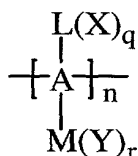1   ABSTRACT OF THE INVENTION

2   The invention provides a device for selective molecular recognition, the device comprising a

3   sensing portion, wherein said sensing portion includes a substrate having coated thereon a layer comprising a

4   hyperbranched compound having:

5   (1)   a polymer backbone portion that is at least partly randomly branched;

6   (2)   at least one pendant group extending from the polymer backbone portion; and

7   (3)   at least one halogen substituted alcohol or phenol group substituted at the pendant

8   group(s) of the polymer backbone portion.

9

10   The compound of the invention preferably has the general formula:

$$\begin{array}{c} L(X)_q \\ | \\ +\!\!\left[\,A\,\right]_n\!\!- \\ | \\ M(Y)_r \end{array}$$

11

12   wherein A is the hyperbranched backbone portion of the polymer;

13   L and M are independently selected pendant groups of said polymer backbone;

14   X and Y are independently selected halogen substituted alcohol or phenol groups;

15   q and r are independently selected and at least 1; and

16   n is at least 3.

17

18   The device is used to detect the molecules of a hydrogen bond accepting vapor such as organophosphorus or

19   nitroaromatic species.